1. (Currently Amended) A method for determining parameters of an equivalent circuit representing a transmission section ~~(4)~~ of an electrical network, where the transmission section ~~(4)~~ is representable as having at least two interfaces ~~(5,6,7)~~ with other sections ~~(1,2,3)~~ of the network,

~~characterised in that~~ wherein the method comprises the steps of

a) determining, for each of the interfaces ~~(5,6,7)~~, a voltage phasor $\cancel{(\bar{v}_1, \bar{v}_2, \bar{v}_3)}$ at the interface ~~(5,6,7)~~ and a phasor of a current $\cancel{(\bar{i}_1, \bar{i}_2, \bar{i}_3)}$ flowing through the interface ~~(5,6,7)~~, the measurements at the different interfaces ~~(5,6,7)~~ being made essentially simultaneously, and

b) computing, from said voltage $\cancel{(\bar{v}_1, \bar{v}_2, \bar{v}_3)}$ and current $\cancel{(\bar{i}_1, \bar{i}_2, \bar{i}_3)}$ phasors, values of impedances $\cancel{(\bar{Z}_T, \bar{Z}_{sh})}$ constituting the equivalent circuit.

2. (Currently Amended) Method according to claim 1, wherein the transmission section ~~(4)~~ is a transmission corridor having exactly two interfaces ~~(5,6,7)~~ to other sections ~~(1,2)~~ of the network.

3. (Currently Amended) Method according to claim 2, wherein a first interface ~~(5)~~ connects the transmission corridor ~~(4)~~ to a network section ~~(1)~~ consisting predominantly of power generators, and a second interface ~~(6)~~ connects the transmission corridor ~~(4)~~ to a network section ~~(2)~~ consisting predominantly of power consumers.

4. (Currently Amended) Method according to claim 2, wherein the transmission network ~~(4)~~ is represented by one of a T-equivalent and a Π-equivalent circuit.

5. (Currently Amended) Method according to claim 3 ~~or 4~~, comprising the further step of computing parameters $\cancel{(\bar{E}_{th}, \bar{Z}_{th})}$ of a Thévenin equivalent of a network constituted by the transmission section ~~(4)~~ and by the network section ~~(1)~~ consisting predominantly of power generators.

6. (Currently Amended) Method according to claim 1, wherein the transmission section ~~(4)~~ comprises three or more interfaces ~~(5,6,7)~~ to other sections of the network ~~(1,2,3)~~ and the equivalent circuit comprises line impedances $\cancel{(\bar{Z}_{12T}, \bar{Z}_{23T}, \bar{Z}_{31T})}$ interconnecting the interfaces and shunt impedances $\cancel{(\bar{Z}_{1sh}, \bar{Z}_{2sh}, \bar{Z}_{3sh})}$ connecting the interfaces ~~(5,6)~~ to a common node.

7. (Currently Amended) Method according to ~~one of the preceding claims~~ claim 1, wherein at least one interface ~~(5;6;7)~~ comprises at least two physical power lines, and the voltage phasor $\cancel{(\bar{v}_1;\bar{v}_2)}$ at the interface ~~(5;6;7)~~ is determined as a weighted sum of the voltages at the power lines.

8. (Currently Amended) Method according to claim 7, wherein a current phasor $\cancel{(\bar{i}_1;\bar{i}_2)}$ representing a current through the interface ~~(5;6;7)~~ is computed from the voltage phasor $\cancel{(\bar{v}_1;\bar{v}_2)}$ at the interface and a power flow $\cancel{(p_{cut1},q_{cut1};p_{cut2},q_{cut2})}$ through the power lines constituting the interface.

9. (Currently Amended) Computer program for determining parameters of an equivalent circuit representing a transmission section of an electrical network which is loadable and executable on a data processing unit and which computer program, when being executed, performs the steps according to ~~one of the claims 1 to 8~~ claim 1.

10. (Currently Amended) Data processing system for determining parameters of an equivalent circuit representing a transmission section of an electrical network comprising means for carrying out the steps of the method according to ~~any one of the claims 1 to 8~~ claim 1.